

CLAIMS

- 1 1. A system for printing time-based media data, the system comprising:
2 a printing system for performing a multimedia function on the time-based
3 media data;
4 a processing device, communicatively coupled to the printer by a network for
5 performing a multimedia function on the time-based media data; and
6 a user interface for receiving a user selection of an amount of processing to be
7 performed by the printer and an amount of processing to be performed
8 by the processing device.
- 1 2. The system of claim 1 wherein the processing device includes the user
2 interface.
- 1 3. The system of claim 1 wherein the printer includes the user interface.
- 1 4. The system of claim 1 wherein the user interface is on a device separate
2 from the processing device and the printer.
- 1 5. The system of claim 2, 3 or 4 wherein the user interface displays status
2 information about the performance of the multimedia function.
- 1 6. The system of claim 1 wherein the processing device is a personal
2 computer.
- 1 7. The system of claim 1 wherein the multimedia function includes selecting
2 a range of audio data in response to received input from the user.
- 1 8. The system of claim 1 wherein the multimedia function includes applying
2 audio event detection to the time-based media data.

1 9. The system of claim 8 wherein the multimedia function further includes
2 determining a confidence level associated with the audio event detection.

1 10. The system of claim 1 wherein the multimedia function includes
2 applying a speaker segmentation function to the time-based media data.

1 11. The system of claim 1 or 10 wherein the multimedia function includes
2 applying a speaker recognition function to the time-based media data.

1 12. The system of claim 1 wherein the multimedia function includes
2 applying a sound source localization function to the time-based media data.

1 13. The system of claim 12 wherein the multimedia function further includes
2 applying audio event detection to the time-based media data.

1 14. The system of claim 1 wherein the multimedia function includes
2 applying a speech recognition function to the time-based media data.

1 15. The system of claim 14 wherein the multimedia function includes
2 applying a profile analysis function to the time-based media data.

1 16. The system of claim 14 wherein the multimedia function includes
2 applying an audio event detection function to the time-based media data.

1 17. The system of claim 16 wherein the multimedia function further includes
2 applying a speaker recognition function to the time-based media data.

1 18. The system of claim 16 wherein the multimedia function further includes
2 applying a speaker segmentation function to the time-based media data.

1 19. The system of claim 16 wherein the multimedia function further includes
2 applying a sound localization function to the time-based media data.

1 20. The system of claim 1 wherein the multimedia function includes selecting
2 a range of video data in response to received input from the user.

1 21. The system of claim 1 wherein the multimedia function includes
2 applying a video event detection function to the time-based media data.

1 22. The system of claim 1 wherein the multimedia function includes
2 applying a color histogram analysis function to the time-based media data.

1 23. The system of claim 1 wherein the multimedia function includes
2 applying a face detection function to the time-based media data.

1 24. The system of claim 23 wherein the multimedia function includes
2 applying a clustering function to the time-based media data to merge multiple
3 instances of a face into a representative face image.

1 25. The system of claim 1 wherein the multimedia function includes
2 applying a face recognition function to the time-based media data.

1 26. The system of claim 1 wherein the multimedia function includes
2 applying an optical character recognition function to the time-based media data.

1 27. The system of claim 26 wherein the multimedia function further includes
2 applying a clustering function to the time-based media data to merge similar results
3 of the optical character recognition.

1 28. The system of claim 1 wherein the multimedia function includes
2 applying a motion analysis function to the time-based media data.

1 29. The system of claim 1 or claim 28 wherein the multimedia function
2 includes applying a distance estimation function to the time-based media data.

1 30. The system of claim 1 wherein the multimedia function includes
2 applying foreground/background segmentation function to the time-based media
3 data.

1 31. The system of claim 1 wherein the multimedia function includes
2 applying a scene segmentation function to the time-based media data.

1 32. The system of claim 31 wherein the multimedia function further includes
2 applying a face recognition recognition function to the time-based media data.

1 33. The system of claim 31 wherein the multimedia function further includes
2 applying a face detection function to the time-based media data.

1 34. The system of claim 31 wherein the multimedia function includes
2 applying an optical character recognition function to the time-based media data.

1 35. The system of claim 34 wherein the multimedia function further includes
2 applying a face recognition function to the time-based media data.

1 36. The system of claim 34 wherein the multimedia function includes
2 applying a face detection function to the time-based media data.

1 37. The system of claim 1 wherein the multimedia function includes
2 applying an automobile recognition function to the time-based media data.

1 38. The system of claim 37 wherein the multimedia function further includes
2 applying a motion analysis function to the time-based media data.

1 39. The system of claim 1 wherein the multimedia function includes
2 applying a license plate recognition function to the time-based media data.

1 40. The system of claim 1 wherein the multimedia function includes
2 applying a visual inspection function to the time-based media data.

1 41. The system of claim 1 wherein the user interface is configured to allow a
2 user to control a compact disc (CD) device.

1 42. The system of claim 1 wherein the user interface is configured to allow a
2 user to control a digital video disc (DVD) device.

1 43. The system of claim 1 wherein the user interface is configured to allow a
2 user to control an audio tape device.

1 44. The system of claim 1 wherein the user interface is configured to allow a
2 user to control a video tape device.

1 45. The system of claim 1 wherein the user interface is configured to allow a
2 user to control a multimedia server.

1 46. The system of claim 1 wherein the user interface is configured to allow a
2 user to control encryption hardware.

1 47. The system of claim 1 wherein the user interface is configured to allow a
2 user to control audio sound localization hardware.

1 48. The system of claim 1 wherein the user interface is configured to allow a
2 user to control motion detection hardware.

1 49. The system of claim 1 wherein the user interface is configured to allow a
2 user to control a MIDI player.

1 50. The system of claim 1 wherein the user interface is configured to allow a
2 user to control a cellular telephone.

1 51. The system of claim 1 wherein the user interface is configured to allow a
2 user to control a two-way radio.

1 52. The system of claim 1 wherein the user interface is configured to allow a
2 user to control a world wide web display.

1 53. The system of claim 1 wherein the user interface is configured to allow a
2 user to control a climate sensor.

1 54. The system of claim 1 wherein the user interface is configured to allow a
2 user to control a radio receiver.

1 55. The system of claim 1 wherein the processor is further configured to
2 display results of the multimedia function on the display of the user interface.

1 56. The printer of claim 1 wherein the second output device is a DVD drive.

1 57. The printer of claim 1 wherein the second output device is a CD drive.

1 58. The printer of claim 1 wherein the second output device is an audio tape
2 drive.

1 59. The printer of claim 1 wherein the second output device is a video
2 cassette device.

1 60. The printer of claim 1 wherein the second output device is a removable
2 media device.

1 61. The printer of claim 1 wherein the second output device is an embedded
2 audio recorder.

1 62. The printer of claim 1 wherein the second output device is an embedded
2 video recorder.

1 63. The printer of claim 1 wherein the second output device is an non-
2 volatile storage device.

1 64. The printer of claim 1 wherein the second output device is an embedded
2 multimedia server.

1 65. The printer of claim 1 wherein the second output device is audio
2 encryption hardware.

1 66. The printer of claim 1 wherein the second output device is video
2 encryption hardware.

1 67. The printer of claim 1 wherein the second output device is audio sound
2 localization hardware.

1 68. The printer of claim 1 wherein the second output device is a cellular
2 telephone.

1 69. The printer of claim 1 wherein the second output device is a two-way
2 radio.

1 70. The printer of claim 1 wherein the second output device is a world-wide
2 web display.

1 71. The printer of claim 1 wherein the second output device is a radio
2 receiver for receiving AM signals.

1 72. The printer of claim 1 wherein the second output device is a radio
2 receiver for receiving FM signals.

1 73. The printer of claim 1 wherein the second output device is a radio
2 receiver for receiving short wave signals.

1 74. The printer of claim 1 wherein the second output device is a satellite
2 radio receiver.

1 75. The printer of claim 1 wherein the second output device is a weather alert
2 receiver.

1 76. The printer of claim 1 wherein the second output device is an emergency
2 alert monitor for receiving emergency broadcast system alerts.

1 77. The printer of claim 1 wherein the second output device is hardware for
2 performing VGA screen captures.

1 78. The printer of claim 1 wherein the second output device is hardware for
2 performing audio capture.

1 79. The printer of claim 1 wherein the second output device is hardware for
2 capturing data from an electronic pen.

1 80. The printer of claim 1 wherein the second output device is a disposable
2 media writer.

1 81. A method for printing time-based media, the method comprising:
2 receiving time-based media data from a media source;
3 receiving user input, the user input specifying a multimedia function to
4 perform on the time-based media, an amount of processing to be

5 performed by a printer, and an amount of processing to be performed by
6 a processing device;
7 performing, by the printer, the amount of processing specified to be
8 performed by the printer to carry out the specified multimedia function;
9 performing, by the processing device, the amount of processing specified to
10 be performed by the processing device to carry out the specified
11 multimedia function;
12 producing output on the printer associated with the processed media data;
13 and
14 producing an electronic output associated with the processed media data.

1 82. The method of claim 81 wherein the user input is received at the printer.

1 83. The method of claim 81 wherein the user input is received at the
2 processing device.

1 84. The method of claim 81 wherein the processing device is a personal
2 computer.

1 85. The method of claim 81 wherein the multimedia function includes
2 selecting a range of audio data in response to received input from the user.

1 86. The method of claim 81 wherein the multimedia function includes
2 applying audio event detection to the time-based media data.

1 87. The method of claim 86 wherein the multimedia function further
2 includes determining a confidence level associated with the audio event detection.

1 88. The method of claim 81 wherein the multimedia function includes
2 applying a speaker segmentation function to the time-based media data.

1 89. The method of claim 81 or 88 wherein the multimedia function includes
2 applying a speaker recognition function to the time-based media data.

1 90. The method of claim 81 wherein the multimedia function includes
2 applying a sound source localization function to the time-based media data.

1 91. The method of claim 90 wherein the multimedia function further
2 includes applying audio event detection to the time-based media data.

1 92. The method of claim 81 wherein the multimedia function includes
2 applying a speech recognition function to the time-based media data.

1 93. The method of claim 92 wherein the multimedia function includes
2 applying a profile analysis function to the time-based media data.

1 94. The method of claim 92 wherein the multimedia function includes
2 applying an audio event detection function to the time-based media data.

1 95. The method of claim 94 wherein the multimedia function further
2 includes applying a speaker recognition function to the time-based media data.

1 96. The method of claim 94 wherein the multimedia function further
2 includes applying a speaker segmentation function to the time-based media data.

1 97. The method of claim 94 wherein the multimedia function further
2 includes applying a sound localization function to the time-based media data.

1 98. The method of claim 81 wherein the multimedia function includes
2 selecting a range of video data in response to received input from the user.

1 99. The method of claim 81 wherein the multimedia function includes
2 applying a video event detection function to the time-based media data.

1 100. The method of claim 81 wherein the multimedia function includes
2 applying a color histogram analysis function to the time-based media data.

1 101. The method of claim 81 wherein the multimedia function includes
2 applying a face detection function to the time-based media data.

1 102. The method of claim 101 wherein the multimedia function includes
2 applying a clustering function to the time-based media data to merge multiple
3 instances of a face into a representative face image.

1 103. The method of claim 81 wherein the multimedia function includes
2 applying a face recognition function to the time-based media data.

1 104. The method of claim 81 wherein the multimedia function includes
2 applying an optical character recognition function to the time-based media data.

1 105. The method of claim 104 wherein the multimedia function further
2 includes applying a clustering function to the time-based media data to merge
3 similar results of the optical character recognition.

1 106. The method of claim 81 wherein the multimedia function includes
2 applying a motion analysis function to the time-based media data.

1 107. The method of claim 81 or claim 106 wherein the multimedia function
2 includes applying a distance estimation function to the time-based media data.

1 108. The method of claim 81 wherein the multimedia function includes
2 applying foreground/background segmentation function to the time-based media
3 data.

1 109. The method of claim 81 wherein the multimedia function includes
2 applying a scene segmentation function to the time-based media data.

1 110. The method of claim 109 wherein the multimedia function further
2 includes applying a face recognition recognition function to the time-based media
3 data.

1 111. The method of claim 109 wherein the multimedia function further
2 includes applying a face detection function to the time-based media data.

1 112. The method of claim 109 wherein the multimedia function includes
2 applying an optical character recognition function to the time-based media data.

1 113. The method of claim 112 wherein the multimedia function further
2 includes applying a face recognition function to the time-based media data.

1 114. The method of claim 112 wherein the multimedia function includes
2 applying a face detection function to the time-based media data.

1 115. The method of claim 81 wherein the multimedia function includes
2 applying an automobile recognition function to the time-based media data.

1 116. The method of claim 115 wherein the multimedia function further
2 includes applying a motion analysis function to the time-based media data.

1 117. The method of claim 81 wherein the multimedia function includes
2 applying a license plate recognition function to the time-based media data.

1 118. The method of claim 81 wherein the multimedia function includes
2 applying a visual inspection function to the time-based media data.